

WHAT IS CLAIMED IS:

1. A medical device, comprising:
at least four layers comprising a first material and a second material having a different stiffness than a stiffness of the first material,
wherein at least one of the layers varies in thickness axially along the device.
2. The device of claim 1, wherein the device is stiffer at a proximal end than at a distal end.
3. The device of claim 1, wherein the first and second materials alternate.
4. The device of claim 1, wherein the layers extend substantially the length of the device.
5. The device of claim 1, comprising at least five layers.
6. The device of claim 1, comprising at least seven layers.
7. The device of claim 1, comprising at least 13 layers.
8. The device of claim 1, wherein the device has the same number of layers for substantially the entire length of the device.
9. The device of claim 1, wherein the at least one of the layers varies in thickness for substantially the entire length of the device.
10. The device of claim 1, wherein the at least one of the layers varies in thickness at a selected portion of the device.
11. The device of claim 1, wherein the at least one of the layers varies in thickness at more than the one selected portions of the device.

12. The device of claim 1, wherein layers of different materials vary in thickness at different selected portions of the device.
13. The device of claim 1, wherein layers of different materials vary in thickness at about the same selected portion of the device.
14. The device of claim 1, wherein the first and second materials comprise block copolymers including common block moieties.
15. The device of claim 14, wherein the block moieties are amide segments and tetramethylene glycol segments.
16. The device of claim 1, wherein the first and/or second material is selected from a group consisting of thermoplastic polyamides, thermoplastic polyesters, and thermoplastic elastomers.
17. The device of claim 1, wherein the first and/or second material is a blend of polymers.
18. The device of claim 1, in the form of a tube.
19. The device of claim 1, in the form of a catheter shaft.
20. The device of claim 1, in the form of guide wire.
21. The device of claim 1, wherein the device is an extruded device.
22. A medical device, comprising:
a first layer formed of a first material;

a second layer formed of a second material having a different stiffness than a stiffness of the first material; and

 a third layer comprising an adhesive material between the first and second layers, wherein the first layer varies in thickness along an axial portion of the device.

23. A method of making a medical device, comprising:

 forming a tube comprising at least three layers formed of a first material and a second material having a different stiffness than a stiffness of the first material; and

 varying the thickness of at least one of the layers axially along the device.

24. The method of claim 23, comprising co-extruding the layers.

25. The method of claim 23, further comprising forming the tube into a guide wire.